# Structural heterogeneity in glass: Insight from relaxation studies

*- An Invited Talk*

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# Structural heterogeneity in glass: Insight from relaxation studies

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## Abstract

As is known, dynamic and structural heterogeneities are present in suppercooled liquids and their glass states. Such heterogeneities are an important factor to be considered when designing nanostructured glasses. However it is still challenging to detect structural heterogeneity in macroscopically homogeneous inorganic glasses. Here we present our recent effort in detecting structural and energetic heterogeneity in several poor inorganic glass formers by considering medium range order. Based on calorimetric studies of relaxation in the hyperquenched and highly mechanically distorted glasses we have obtained strong indirect evidence for the existence of structural heterogeneity in those glasses. This evidence is supported by both nuclear magnetic resonance and high resolution transmission microscopy measurements. In this work, both the hyperquenched oxide glasses and the mechanically vitrified non-oxide glasses are chosen as the objects of our investigations. From the observed new relaxation phenomena we provide insight into the mechanism of the glass formation and glass transition of extremely poor glass formers.

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